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May 14, 2010

Harbor Oil Community Advisory Group
2209 North Schofield
Portland, Oregon 97217

Attention: **Chris Cora, Remedial Project Manager, Harbor Oil Site**

Subject: **Comments on DRAFT Remedial Investigation Report for Harbor Oil Superfund Site, Portland, Oregon**

Dear Mr. Cora:

The *Harbor Oil Community Advisory Group (HOCAG)* has conducted a review of the DRAFT Remedial Investigation (RI) Report for the Harbor Oil Superfund Site in Portland, Oregon. Our broad comments are presented in the body of this letter and specific comments are included as an attachment.

The key issues we have identified are as follows:

Potential sources of contamination have not been adequately characterized. In particular, characterization of onsite sources of DDT has not been discussed nor has the nature and extent of DDT from these sources been considered from a site history or risk assessment perspective. It is stated in the Draft RI "90% of Empire Industries' operation was washing cattle trucks" (page 17). Common stockyard management practices included spraying, dipping, and dusting of cattle with DDT for fly and insect control during the period that cattle truck washing occurred at the site. The following links provide evidence of historical context of this stockyard management practice. (http://www.tulcofb.org/index.php?page=committees&id=31, http://digitalhorizonsonline.org/cdm4/item_viewer.php?CISOROOT=/uw&CISOPTR=335&CISOBOX=1&REC=13).

As DDT use has been documented to be prevalent in the area of the Harbor Oil Superfund site, it is reasonably likely that the Union Stockyards employed similar practices and that the cattle trucks washed on the site contained DDT. The washing and cleaning of cattle trucks performed on the Harbor Oil Superfund site, resulting in DDT residue being discharged to site soil, appears to constitute a release from a facility under CERCLA and it should be thoroughly addressed in the RI as such.

The RI report contains limited interpretation of the data and the adequacy of site characterization has not been proven. There is no discussion or presentation of how the data supports the conceptual site model (CSM) or how the data identified/filled data gaps.

While the RI contains numerous statements about the data themselves, there are few statements about conclusions or interpretation in the context of a CSM drawn from the data. The conclusion section does not present supporting evidence that the nature and extent have been characterized. Supporting information should be included to demonstrate that site characterization is adequate. This could include maps with concentration contours for selected constituents. In addition, there are no graphics showing the extent of LNAPL at the site. The nature, extent, and source of LNAPL are not adequately presented. LNAPL is documented to contain PCBs, pesticides, and other constituents but it is not adequately presented in the RI or discussed or evaluated in either risk assessment.

There was some inconsistency in the details presented in the RI and how the site was characterized in RA. Draft risk assessments (RA) were published first presenting a brief overview of the RI. There is an expectation that the RI report would support this overview presented in the RA reports. However, inconsistencies in minor but significant details were noted in the RI report and this makes it difficult to reconcile field data with how the site was presented for the RA reports. For example section 4.3.3.3 *LNAPL* states "did not identify LNAPL at any boring location." Field notes indicate that field screening of sample SL-10-6-18 include "product" and two other field notes reference product. A second example is that the two data sets that were deemed to meet RA data quality objectives (DQOs) included LNAPL analysis however these data are not fully discussed or presented in the either the RI or RA reports or data sets.

The implications of the presence of PCB and pesticide-containing LNAPL are not adequately discussed. LNAPL was present in sufficient volume in 2000 and 2008 to obtain and analyze samples and at least trace amounts of LNAPL are currently present at the site. LNAPL needs to be discussed, on figures and tables, and the presence of associated constituents detected in the samples needs to be presented more thoroughly. A discussion of the history of LNAPL and the role of the extraction wells should be presented. A review of well logs and figures indicates well design may be a limiting factor in the presence of LNAPL in the wells. We could not locate any clear presentation of what was detected in the LNAPL nor could we locate any data tables for LNAPL except in the Executive Summary. It is unclear how the constituents present in the LNAPL (PCBs, pesticides) have been addressed in the risk assessments even though both LNAPL sampling events are part of the data sets that met DQOs for use in the risk assessments.

The CSM and exposure scenarios are not adequately developed. Without a more fully developed conceptual site model that presents preferential flow pathways, the hydrogeology of the site, and the future land use plans for the open areas the completeness and adequacy of the risk assessments cannot be determined. The early release history from upgradient sites is not addressed in the conceptual site model.

Review of the 1936 and 1956 aerial photographs indicates significant runoff to Force Lake from the upgradient Stockyard property. In addition, North Lake was part of Force Lake prior to 1973. North Lake needs to be included as part of the Facility. Furthermore, it is reasonably likely a site worker is exposed to air emissions from on-site operations and site sources, will go fishing before/after work, and eat the fish. Cumulative risks from reasonably likely exposure scenarios should be considered in the RAs.

It appears the rejection of data results in a low bias for the risk assessments. Most of the data rejected appears to be from source area characterization (identifying the areas most impacted). The data used in the RAs appear to be more delineation characterization (typically the areas least impacted). These two factors appear to combine to make the risk assessments biased low. To make the RAs more accurate with respect to risks from the site, data gaps related to rejection of source characterization data should be filled (i.e., if the data rejected played a role in the complete characterization of the nature and extent of contamination, then these data should have been collected during the RI field effort).

As an example, the 2003 samples obtained and analyzed during the excavation for the new base-oil plant were not discussed. This information should be presented even if the data was determined to not meet the DQOs for use in risk assessment. Significantly impacted soil was identified in several locations. The laboratory report for this work is included as an appendix in the RI Work Plan and this data could be validated and accepted for risk assessment work.

There was a lack of evaluation in variability in both water quality and species. Groundwater and surface water quality has only been evaluated during the wet season (April). To fully characterize risk groundwater and surface water quality samples should be obtained on a quarterly basis for all seasons. A discussion relating the species used in the ecological risk assessment to those actually identified at the site, the seasonal variability of species, and those anticipated to be present in the future based on the future plans for the open space should be presented.

Sediment sampling methodology/interval is not consistent with the contaminant release mechanisms discussed in the site history. The site has a history of a relatively continuous release mechanism through discharge from wash water but also has an episodic release mechanism due to the fire and flood events. A "clean" shallow sediment sample is not evidence that deeper sediment is not impacted from an episodic release.

Preliminary Applicable, or Relevant and Appropriate Regulations (ARARs) **need to be presented in the RI**. No presentation or discussion of potential ARARs has been included in the RI, which may result in risk from the site being inaccurately characterized. ARARs that may drive continued remedial actions have not been considered and some constituents or issues have been omitted from the RAs. For

example, there is no discussion of applicable requirements under Oregon cleanup rules, such as a definition of Hot Spots, which LNAPL is by definition. The Oregon requirement that a remedy address Hot Spots is not considered. State water quality criteria and the fish consumption values on which they are based are ignored because ARARs are not yet considered in the overall process.

There is concern that the exposures to recreational and subsistence fishers, as well as exposures to ecological receptors, are not sufficiently characterized to make informed risk management decisions. The use of biota-sediment accumulation factors provides an unreliable estimate of risk compared to actual tissue data. As requested in the past, tissue samples should be collected to provide more accurate inputs to the risk assessment calculations.

Thank you for allowing us to assist EPA in its goal to clean this site without exposing the community now or in the future to unacceptable risk. We appreciate the opportunity to offer comments. If there are any questions or concerns do not hesitate to contact us. Specific comments are presented in the attachment. These specific comments support the concerns identified above.

Sincerely,

Mark Stephan,
HOCAG Chair

Specific comments are listed in the order identified in the RI report.

- ES.3 *Study Area Investigation.* This section should include a discussion of groundwater discharge to Force Lake. **This is simply an ES, details are provided in main body of text.**
- ES.4 *Nature and Extent of Contamination.* Key Findings should include mention of LNAPL. The concept that constituents have been adequately delineated should be revisited with respect to LNAPL. **The term LNAPL is being used as if a LNAPL exists, when in this case there is a very limited area with a petroleum sheen that is not detected in ANY other well or boring. It is addressed in the main body of the document.**
- ES.5 *Conceptual Site Model.* This section should include a discussion of future land use. In particular in association with Force Lake and the ecological risk assessment and exposure scenarios for recreational users. **There is no anticipated change in future land use from what currently exists. The conceptual site model remains appropriate.**
- ES.6 *Baseline Risk Assessments.* It appears this does not include an evaluation of non-TPH constituents identified in LNAPL samples. If the LNAPL data did not meet DQOs than this appears to be a data gap. **There are not significant COPC's in the LNAPL. Data meet the criteria.**
- ES.7.2 *Groundwater.* LNAPL is identified in the wrong well, should be GA-30. **Correct**
- ES.7.4 *Force Lake Sediment and Surface Water.* Primarily the same sample (ES03) had the highest detections. Evaluate if there is any relation between sample results and historical drainage patterns. **Detail provided in main body of text.**
- Figure 1-4 *Potential Off-Facility Sources.* Should include facilities and features discussed in text. No upgradient facilities are included on the figure. **Yes, all referenced sites should be included and identified in a figure.**
- Figure 1-5 *Former Facility Features.* Needs to include utilities, former septic tanks, other underground piping, and location of the curtain drain piping. **Agree**
- 1.3.2 *Facility History.* There should be a discussion of activities associated with the installation of the extraction wells. **Agree, if available.**
- 1.3.2 *Facility History.* Site history notes that Union Stockyard was a site owner and cattle truck washing was 90% of the washing business. Add a discussion about the use of DDT and other pesticides at the stockyards and evaluate this potential source. Considering the drainage patterns in the earlier aerial photos. The distribution of DDT is consistent with a source at the truck washing facility. **Why?** Our research indicates that DDT dusting/spraying of cattle and hogs was a common practice while the stockyard was in operation. **This potential source can be included if verified, or**

as a speculative source. Additional archive review is appropriate. However, this would not affect the concentration of DDT present.

- 1.3.2 *Facility History.* There should be some discussion if leak testing has been done on the pipes or tanks. **OPERATIONAL ISSUE, but a review of facility and DEQ records is appropriate.**
- 1.3.2.7.5 *New Base-Oil Refining Plant Construction.* Should include a discussion of impacted soil and field observations encountered during these excavation activities. **Agree**
- 1.3.3.1 *1990 Stockyards Site Investigation.* The text states the sampling results (not discussed herein) were summarized in the RI/FS Work Plan. The discussion was not found in the work plan. As historical DDT use is often associated with stockyards and this is a potential source please locate or present the analytical results. **PAGE 37 of RI Workplan**
- 1.3.3.4 2003 *CEC Soil Sampling.* Although the data did not meet DQOs, the concentrations detected were significant enough they should be discussed in general terms. **As a general discussion, yes.**
- 2.3.1.3 *Water Level and Free Product Measurements.* Note that the water level was often above the screen interval. Discuss the impact this would have on the presence of LNAPL in well. The product was described as "viscous oil (black & thick)". Discuss the nature of the LNAPL as it relates to being present in the monitoring. A lack of LNAPL in the well may not be an appropriate indicator of a lack of LNAPL in the subsurface. **Agree, more information on the characteristics of the LNAPL are appropriate. However, the LNAPL does not exhibit any dissolved plume emanating from it and was not identified in any adjacent borings or wells.**
- 2.5 *Lake Surface Water Investigation.* Seasonal water quality should be evaluated. One sample from the wet season does not adequately characterize the nature and extent of the surface water quality. **Why not? There were no significant detections of copc in surface water.**
- 3.4.2 *Local Geology.* Foundry sand is noted as being present from 0 to 3 feet. Include and discuss this as a potential source of metals and potential for leaching to groundwater with discharge to surface water. Please include where foundry sand was encountered, as it is not included on the logs. **If information is available, yes. Logs should reflect the identification of this material.**
- 3.5.2 *Local Hydrogeology.* Include a discussion of the relationship between groundwater and surface water (Force Lake and North Lake). **Agree**
- 3.7.2 *City of Portland Bureau of Planning Survey.* Discussion presented under this section identifies birds and mammals that appear to have not been evaluated in the ecological risk assessment. **The eco risk assessment selects representative species for appropriate trophic levels, not all species are evaluated.**
- *Table 4.1.* Please include LNAPL to give some perspective. **Agree (why is LNAPL sample at 14 feet.?**

- Sample SL-39, SL-15, SL-16, SL-33, SS-01, SL-12, SL-32 all indicate the extent has not been characterized. **Extent of LNAPL? We know it does not extend to those locations?**
- *Figure 4-11.* Include all well locations (extraction wells and wells with LNAPL). Note those wells not sampled due to the presence of LNAPL. **Agree**
- *4.3.3.3 LNAPL* States "Most constituents discussed in this section not detected" as referring to LNAPL. Reconcile this with information in Table ES-2 that indicates TPH, PAHs, cPAHs and PCBs were detected with many detection limits elevated. Also numerous pesticides were detected in 2000 sample. **Provide more detail of COPC's detected in the LNAPL.**
- 4.3.3.3 *LNAPL.* Include a complete discussion of LNAPL analysis that met DQOs (2000 E&E and current)
- 4.3.3.3 *LNAPL.* States "did not identify LNAPL at any boring location." Field notes indicate that field screening of sample SL-10-6-18 include "product". Please include on the published boring logs where evidence of LNAPL was encountered. **Agree**
- 4.4.4 *PCB.* The summary should describe PCBs and concentrations that were detected in LNAPL. **Agree**
- 4.5.1 and 4.6.1 *Known or Suspected Sources and Release Mechanisms.* Foundry sand is noted as present at the site in section 3.4.2. Discuss if this is a potential source of metals. These sections make similar statements that agricultural applications that involved the use of some metals (arsenic and copper) and DDT could also account for their presence at the Facility as a result of cattle truck cleaning operations. Discuss this in relation to the fact that Union Stockyard was a historical site owner (Section 1.3.2.4.3 Canal Capital Corp aka Union Stockyards Corp.) and with respect to constituents detected at the Stockyard. This may require additional discussion in section 1.3.3.1 1990 Stockyards Site Investigation.
- 4.7.3.3 *LNAPL.* Text should be phrased more clearly. Were other chlorinated solvents detected that were not discussed in this section. A review of Appendix B (data tables) and Appendix C (Chain of Custodies) and could not identify a location where LNAPL analysis was discussed/presented. The chain of custody does not identify what analysis was completed on the LNAPL sample. **Agree, clarify this discussion**
- *4.8.3.2 Groundwater.* The presence of significant concentrations of dissolved iron in a shallow, relatively rapidly recharged aquifer indicates that oxygen is quickly depleted in the subsurface. An explanation for the consumption of oxygen in the subsurface has not been offered. Comparing the distribution of dissolved iron with the presence of constituents of concern leads us to believe that microbes using contaminants as a food source are responsible for the depletion of oxygen. If so, the nature and extent of contamination has not been adequately characterized. **Disagree, there may be natural conditions which result in low DO. It should be better explained though.**

- 5.2 *Pathways of Migration and Exposure.* Preferential pathways from historic site features should be discussed. Should discuss air emissions (do they have a current permit and for what activity and set the framework for this with respect to risk). With regard to wetlands, surface water, and lake sediment an expanded discuss focusing on natural drainages prior to fill and golf course development would be beneficial. **Elaborate upon physical changes to the site.**
- 5.2.1 *Groundwater Migration.* Include an expanded discuss of groundwater discharging to surface water. **Agree**
- 5.2.1.2 *Lateral Migration within the Shallow Groundwater Zone.* Please discuss seasonal variability.
- 5.2.2 *Non-Aqueous Phase Liquid Migration.* Reconcile the statement that "LNAPL is not significant at the Facility" with the fact it has been present at the site since 2000, appears to have justified the installation of three extraction wells, was noted in a field sample during these RI activities, and the upgradient extent of LNAPL in the central portion of the site appears to have not been delineated. **Disagree. Clarify that Product was never removed from extraction wells (if verifiable).**
- 5.2.4 *Surface Water and Sediment Migration from Force Lake.* A clearer discussion of historical versus current migration would be appropriate, as there appears to be a significant difference between the two. **Not a significant issue**
- 5.3 *Potential Receptors.* A more complete summary with regards to future receptors should be presented, specifically with regards to the portion of the Facility owned by the City of Portland. **Why? Exposures are reasonably assessed.**
- 6.1 *Human Health Risk Assessment.* Should exposure to on-site air emissions, if currently being discharged under a permit, be included? **Not a release under CERCLA.**
- 6.1.1 *Data Evaluation.* Seems like the LNAPL data (2000 and 2008) were not used in the risk assessment even though the data were identified as acceptable. **Because they don't represent a RME.**
- *Figure 6-1 Human Health CSM.* It is reasonably likely that an on-site worker (either outdoor construction or indoor) would fish at Force Lake and be exposed to sediment, surface water, and consume fish. It also seems like the presence of the gravel is not a permanent enough barrier to consider dermal soil contract, incidental soil ingestion, and soil particle inhalation incomplete exposure scenarios. **That is not reasonable to expect a worker to also fish and consume those fish routinely.**
- 6.1.1 *Data Evaluation.* How were elevated detection limits for LNAPL analysis handled? Especially with respect to DDT (detection limit was elevated to 1,200 ug/L). **Still not significant for exposure.**
- 7.1.1 *Site Description and History.* Include 90% of truck washing activity was cattle truck washing.
- 7.1.2 *Study Area Investigation.* Include what phase of work LNAPL sampling occurred.

- 7.1.3 *Physical Characteristic of the Study Area.* Surface features - Include historical topography/surface features. Hydrogeology – include groundwater/surface water interaction.**If available, yes.**
- 7.1.4 *Nature and Extent of Contamination.* Include a discussion of LNAPL and LNAPL constituents. A discussion about the nature and extent of DDT from the truck washing source should be presented. **Acceptable, CSM should be expanded to address DDT "source".**
- 7.1.5 *Conceptual Site Model.* Potential future migration pathways should include utilities placed through LNAPL area. Plans for future development of infrastructure should consider options that may include routing stormwater through the area from proposed Interstate 5 bridge development. What are the depths of on site utilities, what are the locations of onsite utilities? Future buildings could be located in any area. Please address that risk. **Too speculative to reasonably assess.**
- *Table 7-1* Should include trench worker exposure to LNAPL. **It is not significant enough to evaluate.**
- 7.2.2 *Groundwater.* The monitoring well with LNAPL is GA-30 not GA-34. The lack of recharge of LNAPL to the well is not necessarily an indication of lack of LNAPL in the subsurface. Should include a discussion of elevated LNAPL constituents, as near maximum concentrations of many constituents were noted in LNAPL. Of what significance are the other pesticides detected in the 2000 sample and should groundwater have been analyzed for these pesticides? **Pesticides were analyzed in GW. TPH represents the maximum in the LNAPL.**
- *Table 7-5.* PCBs, should include concentration of LNAPL. Show extent of LNAPL on figures.
- *Table 7-9* Should include RAO for LNAPL.
- There is no discussion if the analytical program adequately evaluates the current and historical contents of the tank farm.
- *HHRA ES.1Data Evaluation.* States that the 2008/2009 and 2000 EPA data sets were used for the HHRA and quotes "In total, the HHRA dataset included Facility soil samples, groundwater samples, wetland soil samples, lake sediment samples, and lake surface water samples." However the 2008/2009 data and 2000 EPA data sets also included LNAPL data. Please reconcile if the data set was acceptable and if it was or wasn't used. **Address**
- *HHRA ES.2 Conceptual Site Models and Exposure Assessment.* The construction/trenching worker RME scenario presented does not adequately address risk associated with impacted soil in the new base-oil plant/tank farm area. This area is a data gap in the HHRA data set. The exposure scenarios should consider that a site worker would consume fish from Force Lake. **Disagree**
- *HHRA ES.3 Toxicity Assessment.* Should include an evaluation or discussion of the toxicity of the LNAPL.

- *HHRA ES.4 Risk Characterization and Uncertainty Analysis. LNAPL* should be included in this discussion. Discussion of risk associated with background concentrations should be removed including comparison to study area risk. **Why?**